

REMARKS

These remarks follow the order of the paragraphs of the office action. Relevant portions of the office action are shown indented and italicized.

DETAILED ACTION
Election/Restrictions

1. Applicant's election of claims 1-10 in the reply filed on March 10, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC §112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112: The specification shall contain a written description of the invention, and of the manner and process or making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth The best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The instant specification and current claims use the term "delay deformation" throughout. However, a review of the instant specification provides no clear understanding of what the "delay deformation" is, both structurally and conceptually. Specifically, on page 16, line 16+, it is stated that the acoustic data "can provide a new cue referred to as a delay deformation in this invention. The "delay deformation" is further referenced as a "new scale", "a spheroid", "enveloping surface of a plurality of spheroids", "an ellipse" etc. It is unclear from the specification what the delay deformation is.

In response, the applicants respectfully states that the term "delay deformation" in the specification is a result of a probable typographic or translation error. It may possibly result from an incorrect global replacement rather than a bad translation of the priority application written in the Japanese language. Thus a replacement specification is provided herewith which corrects

1 the term "delay deformation" to the correct term of "delay information" in 55 places in the
2 specification.

3 Applicants state that the term "delay information" is the proper translation of the Japanese
4 language priority specification, and is not the introduction of new matter. The claim listing
5 accompanying this response amends the originally filed claims replacing the term "delay
6 deformation" to the correct term of "delay information." This overcomes the rejection under 35
7 U.S.C. 112, first paragraph, of Claims 1-10. Thus claims 1-10 are allowable.

8 ***Claim Rejections -35 USC § 103***

9 *4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all*
10 *obviousness rejections set forth in this Office action: (a) A patent may not be obtained*
11 *though the invention is not identically disclosed or described as set forth in section 102 of*
12 *this title, if the differences between the subject matter sought to be patented and the prior*
13 *art are such that the subject matter as a whole would have been obvious at the time the*
14 *invention was made to a person having ordinary skill in the art to which said subject*
15 *matter pertains. Patentability shall not be negated by the manner in which the invention*
16 *was made.*

17 *5. Claims 1 and 6 as best understood, are rejected under 35 U.S.C. 103(a) as being*
18 *unpatentable over the patent to Mattisson (6,925,296).*

19 In response, the applicants respectfully state that Claims 1 and 6 are apparently not made obvious
20 or unpatentable by the invention of Mattisson. The present invention, claimed in Claims 1 and 6:

21 "Enables the estimation of a sound source position at an angle in a system with a small
22 number of microphones, which was conventionally difficult to perform, and improve the
23 precision of estimating the sound source position. By forming a reflecting surface RS as
24 an enveloping surface of a spheroid in which a position of sound collecting means and a
25 sound source position are the focal points, a major reflected wave having a delay amount
26 corresponding to a sound source position is generated, and the delay amount between the
27 direct wave and the reflected wave is checked, whereby the sound source position is
28 acquired and estimated."

1 Thus the presently claimed invention is directed to a sound source localization system, and sound
2 reflecting element to estimate sound source position at an angle in a system with a small number
3 of microphones.

4 Whereas, the cited art to Mattisson, US Patent 6,925,296, filed: December 21, 2001, is entitled:
5 “Sound-based proximity detector”. The Mattisson abstract reads :

6 “A proximity detector for use in a mobile telephone having at least a microphone and a
7 loudspeaker operatively connected to a signal processor is presented. The proximity
8 detector includes data processing and control modules having a module for controlling
9 the signal processor for activating the loudspeaker to reproduce an acoustic control signal.
10 A correlator correlates a control signal received directly by the microphone and a control
11 signal being reflected from a user of the telephone and then received by the microphone
12 to determine the distance between the telephone and the user. A signal level controller
13 controls the signal processor to vary the signal level of an audible signal reproduced by
14 the loudspeaker proportionally to the determined distance between the telephone and the
15 user”.

16 Thus Mattisson is concerned with a sound-based proximity detector. Mattison is apparently not
17 concerned with and doesn't allude to a sound source localization system, or a sound reflecting
18 element to estimate sound source position at an angle in a system with a small number of
19 microphones. Thus claims 1-10 are not made obvious and are allowable over Mattison.

20 *Per independent claims 1 and 6, Mattisson discloses a proximity detecting system and*
21 *method that includes a sound reflecting element (13) and a sound source localization part*
22 *(3). See col. 2, lines 34-43.*

23 *The difference between claims 1 and 6 and Mattisson is the claimed “storage part” or*
24 *step of “storing said collected data . . .”, respectively.*

25 *However, even though Mattisson does not include a specific storage structure, it is*
26 *obvious to one of ordinary skill in the art that the A/D converter (2) would inherently*
27 *provide storage for the reflected and direct waves.*

28 In response, the applicants respectfully states that they take exception with the alleged
29 equivalence of claims 1 and 6 with the invention of Mattison. Claim 1, as amended reads:

30 (1) A sound source localization system comprising:

1 a sound reflecting element for generating delay information corresponding to a relative
2 position between a sound source and sound collecting means;

3 a storage part for recording and storing the acoustic data collected via said sound
4 reflecting element; and

5 a sound source localization part for acquiring a sound source position, employing the
6 acoustic data on which said delay information is superposed.

7 Apparently Mattisson uses a microphone and a loudspeaker. Mattisson does not provide or
8 suggest use of a sound reflecting element, and is not concerned with recording and storing the
9 acoustic data, and is not concerned with acoustic data on which said delay information is
10 superposed. Use of a specific sound reflecting element and a specific sound source localization
11 part provides for increased precision needed in many applications. Thus claims 1 and all claims
12 that depend thereupon are allowable over Mattisson.

13 Claim 6, as amended reads:

14 6. A sound source localization method for acquiring the position of a sound source under
15 the control of an information processing apparatus, said method comprising:

16 a step of collecting the acoustic data with delay information superposed corresponding to
17 a relative position between a sound source and sound collecting means;

18 a step of storing said collected acoustic data in a storage part; and

19 a step of reading the acoustic data with said delay information superposed and acquiring
20 said relative position of said sound source designated by said delay information.

21 Apparently Mattisson uses a microphone and a loudspeaker. Mattisson does not provide or
22 suggest collecting the acoustic data with delay information superposed, and Mattisson is not

1 concerned with storing the acoustic data. Thus claims 6 and all claims that depend thereupon are
2 allowable over Mattisson.

3 The office communication fails to make any statement regarding the elements of dependent
4 claims 2-5 and 7-10. It is apparent that these are certainly allowable over Mattisson each for
5 itself and also because each depends on an allowable claim.

6 Claims 16-20 are added to better protect the invention without introducing new matter.

7 It is anticipated that this amendment brings claims 1-10 and claims 16-20 to allowance. Please
8 contact the undersigned if any question remains.

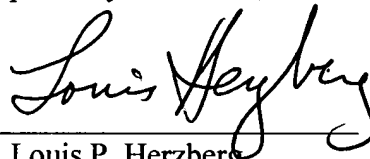
9 Please charge any fee necessary to enter this paper to deposit account 50-0510.

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Respectfully submitted,

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